

## **ABSTRACT OF THE DISCLOSURE**

In one aspect, the present invention is a sensor unit for sensing process parameters of a process to manufacture an integrated circuit using integrated circuit processing equipment. In one embodiment, the sensor unit includes a substrate having a wafer-shaped profile and a first sensor, disposed on or in the substrate, to sample a first process parameter. The sensor unit of this embodiment also includes a second sensor, disposed on or in the substrate, to sample a second process parameter wherein the second process parameter is different from the first process parameter. In one embodiment, the sensor unit includes a first source, disposed on or in the substrate, wherein first source generates an interrogation signal and wherein the first sensor uses the interrogation signal from the first source to sample the first process parameter. The sensor unit may also include a second source, disposed on or in the substrate, wherein second source generates an interrogation signal and wherein the second sensor uses the interrogation signal from the second source to sample the second process parameter. The first sensor and the first source may operate in an end-point mode or in a real-time mode. In this regard, the first sensor samples the first parameter periodically or continuously while the sensor unit is disposed in the integrated circuit processing equipment and undergoing processing. In one embodiment, the first sensor is a temperature sensor and the second sensor is a pressure sensor, a chemical sensor, a surface tension sensor or a surface stress sensor.